Rock Drilling Tools

Brunner & Lay

"Quality First" since 1882.

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In 2012, Brunner & Lay, Inc. celebrated one hundred and thirty years of continuous operations under the ownership and control of the founding family. The original products manufactured by this enterprise were those used in the sculpturing of stone, production of monuments, building stones, and "objects d′ art".

From a very inauspicious beginning in a small blacksmith shop originally started in 1882 by Edward Brunner and Severin Lay, Brunner & Lay, Inc. and its affiliated companies have become recognized as the quality leaders, as well as the world's largest manufacturer of paving breaker tools. Today, using the latest state of the art equipment in its facilities throughout the world, Brunner & Lay, Inc.'s entire output is devoted to the manufacture of pneumatic and hydraulic tool accessories for the construction, mining, and demolition industries.

Circa 1910 - Polk Street Plant - Chicago, IL

The worldwide operations encompass manufacturing plants and warehouses on three different continents. These include seven facilities in the United States, three in Canada, three in Great Britain, one in Germany, and two in Australia. The corporation is currently overseen by F. Michael Brunner, President, the fourth generation of the Brunner Family to oversee operations.

Brunner & Lay products are divided into three major categories: tools used for the demolition or cutting of concrete and stone, drill steels and carbide tipped bits which are used to drill blast holes in quarries, mines, and construction projects, and small chipping and electric hammer tools which are used by the general construction trade.

It is with great pride that the Brunner & Lay organization can point to the many wonderful highways, dams, airfields, mines & quarries, and national monuments it has shaped. These include, but are not limited to Mt. Rushmore, Hoover Dam, the Chunnel connecting England and France, the Eisenhower Tunnel in Colorado, and Olympic venues worldwide.

These accomplishments could not have been achieved without the extended efforts of long time dedicated employees and the many fine distributors who have provided loyal support over these years. Brunner & Lay extends its very sincere thanks to these employees and distributors.

Brunner & Lay is confident that its products will contribute to worldwide health, growth, and prosperity far into the future.

Circa 2011 - Old Missouri Road Plant - Springdale, AR

Rock Drilling Tools

Catalog # 12RD

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Warehouses

150 Sweeten Creek Rd, Asheville NC 28803
ph 828 274-2770 fx 828 274-1534

9300 King St, Franklin Park IL 60131
ph 847 678-3232 fx 847 678-0642

7850 Carr St, Dallas TX 75227
ph 214 275-0013 fx 214 275-0310

4000 Telephone Rd, Unit B-7, Houston TX 77087
ph 713 643-4426 fx 713 643-9206

5338 Tennyson St, Denver CO 80212
ph 303 458-5370 fx 303 458-5325

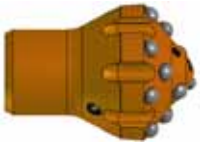
2425 E 37th St, Los Angeles CA 90058
ph 323 587-1233 fx 323 587-7513

Drifting & Tunneling

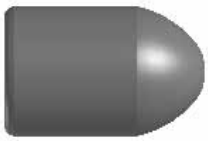
Intraset - used for shaft sinking, tunnel driving and mining where small holes are desired.

Tapered Equipment - used in shaft sinking, tunnel driving and mining where small holes are desired. The objective in using tapered drill steel and bits is to achieve the full utilization of the drill steel. With integral drill steel if the chisel wears or breaks the entire unit is discarded, whereas the tapered drill bits can be replaced or the steel reshanked or even retapered.

Rope Thread - used for underground mining in production drilling, longhole drilling, and roof bolting applications.

Taper	Face Style	Applications	Designation
	Single Pass	Eliminates resharpening, may be more economical for some applications, mainly broken rock formations and rough conditions.	L0 
	Multi Pass	Designed for multiple resharpenings until the full insert height is consumed, again for broken rock formations and rough conditions.	M0 
	Button	For faster penetration and improved flushing which increases overall production drilling.	M 
Rope	**Body Style**		
	Modified Chisel / Chisel	Designed for dimensional stone applications, as well as roof bolting, for hole size control.	M  P0 
	Round	Designed for a smooth even hole size, promotes fast penetration in tunneling and production .	F3  B0  CC 
	Dome	For reaming in a pre-drilled pilot hole.	G0 

Choosing the right carbide:
The larger the volume of carbide, the more aggressive the bit. The more aggressive carbides assist movement of the chips away from the face as there is more room for airflow on the face of the bit. These more aggressive bits help to break out larger chips, which increases the penetration rate. There is also a greater volume of carbide to wear away which can lead to longer bit life.

	Carbide	Applications	Designation
	Standard	Spherical carbides for use in medium to hard rock, with fractured or seamy applications.	None
	Conical	For use in soft to medium rock hardness, more aggressive with faster penetration rates.	**C
	Parabolic	Semi-ballistic shaped sometimes called “baby-ballistic”, more aggressive than the spherical carbides, for soft to medium consistent rock.	**P
	Ballistic	Bullet shaped, very aggressive fast penetration in soft to medium consistent rock.	**B

Add last letter (P,C,B) to our part number for the desired carbide. Standard carbide (S) has no designation except on retrac bits.

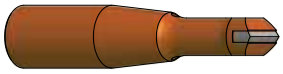
Intraset

	Bit Size		Length		Part Number	Weight	
	Inches	MM	Feet	MM		Pounds	Kilograms
7/8" x 4-1/4"							
Series 11	1.34	34	2' 7"	800	X40834	6.5	2.9
	1.30	33	5' 3"	1600	X41633	11.9	5.4
	1.25	32	7' 10"	2400	X42432	17.6	7.9
	1.22	31	10' 6"	3200	X43231	22.5	10.2
	1.18	30	13' 1"	4000	X44030	28.0	12.7
	1.14	29	15' 9"	4800	X44829	33.5	15.1
Series 12	1.57	40	2' 7"	800	X40840	6.5	2.9
	1.54	39	5' 3"	1600	X41639	11.9	5.4
	1.50	38	7' 10"	2400	X42438	17.6	7.9
	1.46	37	10' 6"	3200	X43237	22.5	10.2
	1.42	36	13' 1"	4000	X44036	28.0	12.7
	1.38	35	15' 9"	4800	X44835	33.5	15.1
Series 13	1.34	34	1' 4"	400	X40434	5.8	2.6
Series 16	1.38	35	2'	600	X40635	5.3	2.4
	1.34	34	4'	1200	X41234	9.3	4.2
	1.30	33	6'	1800	X41833	13.2	5.9
	1.25	32	8'	2400	X42432	17.6	7.9
Series 17	1.61	41	2'	600	X40641	5.3	2.4
	1.57	40	4'	1200	X41240	9.3	4.2
	1.54	39	6'	1800	X41839	13.2	5.9
	1.50	38	8'	2400	X42438	17.6	7.9
	1.46	37	10'	3048	X43037	22.0	9.9
1" x 4-1/4"							
	1.61	41	2'	600	X50641	6.8	3.0
	1.57	40	4'	1200	X51240	12.1	5.5
	1.54	39	6'	1800	X51839	17.4	7.8
	1.50	38	8'	2400	X52438	22.6	10.2
	1.75	45	2'	600	X50645	6.8	3.0
	1.73	44	4'	1200	X51244	12.1	5.5
	1.69	43	6'	1800	X51843	17.4	7.8
	1.65	42	8'	2400	X52442	22.6	10.2

Length is below collar.

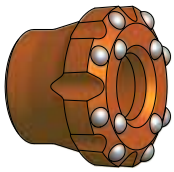
Reaming Equipment

Pilot Adaptors



Length		Part Number	Weight	
Inches	MM		Pounds	Kilograms
9.25	235	CP30R32	5	2.3
9.25	235	CP43R32	5.5	2.5

Reaming Bits



		Part Number			Inserts			Holes	
Inches	MM		Pounds	Kilos	Gauge	Mid	Face	Top	Side
3-1/2”	89	S35PAP0	3.9	1.8	8	6			
4”	102	S40PBP0	4.9	2.2	8	4			

Taper Drill Steel

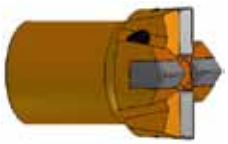
	Length		Taper		Weight	
	Feet	MM	11˚ Taper	12˚ Taper	Pounds	Kilograms
7/8” x 4-1/4”						
	2’	610	K102425	K102426	5.0	2.3
	2-1/2’	762	K103025	K103026	6.1	2.8
	3’	914	K103625	K103626	7.1	3.2
	3-1/2’	1067	K104225	K104226	8.1	3.7
	4’	1219	K104825	K104826	9.2	4.2
	4-1/2’	1372	K105425	K105426	10.2	4.6
	5’	1524	K106025	K106026	11.3	5.1
	5-1/2’	1676	K106625	K106626	12.3	5.6
	6’	1829	K107225	K107226	13.3	6.0
	6-1/2’	1981	K107825	K107826	14.4	6.5
	7’	2134	K108425	K108426	15.4	7.0
	7-1/2’	2286	K109025	K109026	16.4	7.4
	8’	2439	K109625	K109626	17.5	7.9
	8-1/2’	2591	K110225	K110226	18.5	8.4
	9’	2743	K110825	K110826	19.5	8.8
	9-1/2’	2896	K111425	K111426	20.6	9.3
	10’	3048	K112025	K112026	21.6	9.8
	10-1/2’	2100	K112625	K112626	22.6	10.3
	12’	3658	K114425	K114426	25.7	11.7
	13’	3962	K115625	K115626	27.8	12.6
	14’	4267	K116825	K116826	29.9	13.6
1” x 4-1/4”						
	2’	610	K202435	K202436	6.6	3.0
	4’	1219	K204835	K204836	12.0	5.4
	6’	1829	K207235	K207236	17.4	7.9
	8’	2438	K209635	K209636	22.8	10.3
	10’	3048	K212035	K212036	28.2	12.8
	12’	3658	K214435	K214436	33.6	15.2

Length is below collar. Call your local warehouse for longer lengths

All taper steel is carburized.

E, H, and D thread shanked steel and Rock-Bits are available in the Brunner & Lay Paving Breaker Tool Catalog.

Taper Drill Bits

	Diameter		Taper			Weight	
	Inches	MM	7/8" - 11˚	7/8" - 12˚	1" - 11˚	Pounds	Kilograms
Single Pass Taper Bits							
	1-1/8"	28.5	T0906L0				
	1-1/4"	32	T1001L0	T1004L0		.38	.17
	1-3/8"	35	T1201L0	T1204L0	T1202L0	.42	.19
	1-1/2"	38	T1501L0	T1504L0	T1502L0	.53	.24
	1-5/8"	41	T1601L0		T1602L0	.55	.25
	1-3/4"	45	T1701L0	T1704L0	T1702L0	.61	.28
	2"	51	T2001L0		T2002L0	.75	.34
Multi Pass Taper Bits							
	1-1/4"	32		T1004M0		.38	.17
	1-3/8"	35		T1204M0		.42	.19
	1-1/2"	38		T1504M0		.53	.24
	1-5/8"	41		T1604M0		.55	.25
	1-3/4"	45		T1704M0		.61	.28
	2"	51		T2004M0		.75	.34
Button Bits							
	1-1/4"	32	S1001M	S1004M		.39	.18
	1-3/8"	35	S1201M	S1204M		.43	.20
	1-1/2"	38	S1501M	S1504M		.54	.24
	1-5/8"	41	S1601M	S1604M		.56	.25

Controlled diameter available upon request.

Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide

Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

Due to Manufacturing tolerances, the actual bit diameters could exceed the nominal diameters given in this catalog by .090". This along with certain rock conditions could affect hole size desired.

Bits required to drill a specific tolerance hole are available on request. Consult factory for price and availability.

If a bit size or configuration does not appear in this catalog call customer service for assistance.

Shims for 7/8" x 12degree are also available upon request.

100 Rope / 1” / R25

	Length		Part Number	Weight	
	Feet	MM		Pounds	Kilograms
Shanked Rods					
7/8” x 4-1/4”	1’	305	P02B100	3.5	1.6
	2’	610	K10242A	5.5	2.5
	3’	914	K10362A	7.6	3.4
	4’	1219	K10482A	9.7	4.4
	6’	1829	K10722A	13.8	6.3
	8’	2438	K10962A	17.9	8.1
	10’	3048	K11202A	22.1	10.0
1” X 4-1/4”	1’	305	K20123A	3.9	1.8
	2’	610	K20243A	6.6	3.0
	3’	914	K20363A	9.3	4.2
	4’	1219	K20483A	12.0	5.4
	6’	1829	K20723A	17.4	7.9
	8’	2438	K20963A	22.8	10.3
	10’	3048	K21203A	28.2	12.8
Carbex Rods					
7/8” Hex	2’	610	K1024AA	5.1	2.3
	4’	1219	K1048AA	9.2	4.2
	6’	1829	K1072AA	13.4	6.1
	8’	2438	K1096AA	17.5	8.0
	10’	3048	K1120AA	21.6	9.8
1” Hex	4’	1219	K2048AA	11.8	5.4
	6’	1829	K2072AA	17.2	7.8
	8’	2438	K2096AA	22.6	10.3
	10’	3048	K2120AA	28.0	12.7
Drifter Rods					
100R to 125R	6’4”	1930	K2076AC	17.5	8.0
	8’2”	2489	K2098AC	22.0	10.0
	9’2”	2794	K2110AC	24.5	11.1
	10’ 1-1/2”	3073	K2121AC	27.7	12.6
	12’ 1-1/2”	3683	K2145AC	33.1	15.0

Other lengths available upon request.

100 Rope / 1” / R25

		Diameter		Part Number	Weight	
		Inches	MM		Pounds	Kilograms
Couplings						
100 Rope		1-1/2”	38	CC100R0	2.0	.91
Thin Wall		1-3/8”	35	CC100R0T	1.35	.6
100 Rope to 125 Rope		1-3/4”	45	CA10125	2.1	.91

		Diameter		Part Number	Weight			Inserts		Holes	
		Inches	MM		Pounds	Kilos	Gauge	Mid	Face	Top	Side
Standard 4-Point Bits											
		1-3/8”	35	T1210M0	.7	.32					
		1-1/2”	38	T1510M0	.9	.41					
		1-5/8”	41	T1610M0	1.1	.50					
		1-3/4”	45	T1710M0	1.2	.54					
		1-7/8”	48	T1910M0	1.5	.68					
		2”	51	T2010M0	1.7	.77					
		2-1/4”	57	T2210M0	1.8	.90					
Button Bits											
Modified Chisel		1-3/10”	33	S03310M	1.0	.45	5-9/32		2-1/4	1-5/32	2-3/16
		1-3/8”	35	S1210M	1.1	.50	5-9mm		2-1/4	1-3/20	2-3/16
		1-29/64”	37	S03710M	1.1	.50	5-9mm		2-7/25	1-3/20	2-3/16
		1-1/2”	38	S1510M	1.1	.50	5-11/32		2-1/4	1-3/16	2-1/4
		1-5/8”	41	S1610M	1.3	.59	5-9mm		2-5/16	1-1/4	1-1/4
		1-3/4”	45	S1710M	1.5	.68	5-3/8		2-3/8	1-7/25	1-5/16
		1-7/8”	48	S1910M	1.7	.77	5-7/16		2-3/8	1-1/4	2-7mm
Crown		1-1/2”	38	S1510C6	1.1	.50	6-5/16		2-1/4	1-3/16	2-3/16
		1-5/8”	41	S1610C6	1.3	.59	6-5/16		2-1/4	1-1/4	2-1/4
		1-3/4”	45	S1710C6	1.5	.68	6-5/16		2-5/16	1-1/4	2-3/16
		1-7/8”	48	S1910C6	1.7	.77	6-3/8		2-5/16	1-5/16	2-1/4
		2”	51	S2010C6	2.0	.91	6-3/8		3-5/16	1-5/16	3-1/4

Other and controlled diameters available upon request.

Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide

Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

112 Rope / 1-1/8” / R28

Drifter Rods

112R to 125R (1-1/8” Hex)

Length		Part Number	Weight	
Feet	MM		Pounds	Kilograms
10’ 1-1/2”	3073	K31210C	34.6	15.7
12’ 1-1/2”	3683	K31450C	42.1	19.1
14’ 1-1/2”	4293	K31690C	48.0	21.8

112 Rope / 1-1/8” / R28

	Diameter		Part Number	Weight			Inserts		Holes	
	Inches	MM		Pounds	Kilos	Gauge	Mid	Face	Top	Side
Standard 4-Point										
	1-5/8”	41	T1611M0	1.1	.50					
	1-3/4”	45	T1711M0	1.2	.54					
	1-7/8”	48	T1911M0	1.5	.68					
	2”	51	T2011M0	1.7	.77					
	2-1/4”	57	T2211M0	1.8	.90					
Button Bits										
Modified Chisel	1-1/2”	38	S1511M	1.1	.50	5-9mm		2-1/4	1-3/16	2-1/4
	1-5/8”	41	S1611M	1.3	.59	5-9mm		2-5/16	1-1/4	1-1/4
	1-3/4”	45	S1711M	1.5	.68	5-3/8		2-3/8	1-7/32	1-5/16
	1-7/8”	48	S1911M	1.7	.77	5-7/16		2-3/8	1-1/4	1-7mm
	2”	51	S2011M	2.0	.91	5-7/16		2-7/16	1-3/16	2-5/16
Crown										
	3”	76	S3011CA	2.7	1.2	6-1/2	3-7/16	3-3/8	3-5/16	1-1/4

Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide

Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

125 Rope / 1-1/4” / R32

	Length		Part Number	Weight	
	Feet	MM		Pounds	Kilograms
Shanked Rods					
1” X 4-1/4”	2’	610	K20243C	7.1	3.2
	3’	914	K20363C	9.8	4.4
	4’	1219	K20483C	12.5	5.7
	6’	1829	K20723C	17.9	8.1
	8’	2438	K20963C	23.3	10.6
	10’	3048	K21203C	28.7	13.0
Carbex Rods					
1” Hex	4’	1219	K2048CC	11.8	5.4
	6’	1829	K2072CC	17.2	7.8
	8’	2438	K2096CC	22.6	10.3
	10’	3048	K2120CC	28.0	12.7
Drifter Rods					
125R to 150R (1-1/4” Hex)	10’ 1-1/2”	3073	K4121CE	43.5	19.7
	12’ 1-1/2”	3683	K4145CE	51.8	23.5
	14’ 1-1/2”	4293	K4169CE	63.6	28.8
	16’ 1-1/2”	4902	K4193CE	72.4	32.8
	18’ 1-1/2”	5525	K4217CE	81.3	36.9
125R to T38 (1-1/4” Hex)	10’ 1-1/2”	3073	K4121CQ	43.5	19.7
	12’ 1-1/2”	3683	K4145CQ	51.8	23.5
	14’ 1-1/2”	4293	K4169CQ	63.6	28.8
	16’ 1-1/2”	4902	K4193CQS	72.4	32.8
	18’ 1-1/2”	5525	K4217CQS	81.3	36.9
125R to 150R (1-3/8” Hex)	16’ 1-1/2”	4902	K8193CE	85.6	38.8
	18’ 1-1/2”	5525	K8217CE	96.0	43.5
125R to T38 (1-3/8” Hex)	16’ 1-1/2”	4902	K8193CQS	85.6	38.8
	18’ 1-1/2”	5525	K8217CQS	96.0	43.5
Extension Rods					
Single Thread (1-1/4” Round)	4’	1220	J4048CC	15.0	6.8
	6’	1830	J4072CC	22.5	10.2
	8’	2440	J4096CC	30.0	13.6
	10’	3050	J4120CC	37.5	17.0
	12’	3660	J4144CC	45.0	20.4
	14’	4265	J4168CC	52.5	23.8
Multilife (1-1/4” Round)	10’	3050	J4120DD	37.5	17.0
	12’	3660	J4144DD	45.0	20.4
	14’	4265	J4168DD	52.5	23.8
Male/Female (1-1/4” Round)	4’ 3”	1295	J4051C1	17.1	7.8
	5’ 3”	1600	J4063C1	20.9	9.5
	6’ 3”	1905	J4075C1	24.6	11.2
	8’ 3”	2515	J4099C1	32.1	14.6
	10’ 3”	3124	J4123C1	39.6	18.0
	12’ 3”	3734	J4147C1	47.1	21.4

Flats available upon request.

125 Rope / 1-1/4” / R32

All Thread

1-1/4” Round

Length		Part Number	Weight	
Feet	MM		Pounds	Kilograms
10’	3050	J4120LL	30.6	13.9
12	3660	J4144LL	37.0	16.8

Couplings

125 Rope
Thin Wall
100 Rope to 125 Rope
125 Rope to 150 Rope
125 Rope to T38

Diameter		Part Number	Weight	
Inches	MM		Pounds	Kilograms
1-3/4”	45	CC125R0	2.0	.91
1-5/8”	41	CC125R0T	1.7	.77
1-3/4”	45	CA10125	2.1	.91
2-3/16”	56	CA12515	4.2	2.1
2-1/8”	54	CA12538	4.2	2.1

4-Point Bits

Diameter		Part Number	Weight		Inserts			Holes	
Inches	MM		Pounds	Kilos	Gauge	Mid	Face	Top	Side
1-5/8”	41	T1612M0	1.1	.50					
1-3/4”	45	T1712M0	1.2	.54					
1-7/8”	48	T1912M0	1.5	.68					
2”	51	T2012M0	1.7	.77					
2-1/4”	57	T2212M0	1.8	1.0					
2-1/2”	64	T2512M0	2.5	1.1					
3”	76	T3012M0	3.5	1.6					

Button Bits

Modified Chisel

1-5/8”	41	S1612M	1.3	.59	5-23/64		2-5/16	1-1/4	1-1/4
1-3/4”	45	S1712M	1.5	.68	5-3/8		2-3/8	1-7/32	1-5/16
1-7/8”	48	S1912M	1.7	.77	5-7/16		2-3/8	1-1/4	2-9/32
2”	51	S2012M	2.0	.91	5-7/16		2-7/16	1-3/16	1-5/16

Crown

1-3/4”	45	S1712P0	1.5	.68	6-23/64		2-32/64	2-15/64	
1-7/8”	48	S1912P0	1.7	.77	6-23/64		2-23/64	2-15/64	
2”	51	S2012P0	2.0	.91	6-3/8		2-3/8	1-5/16	

Round

B0 see p.4

1-3/4”	45	S1712B0	1.5	.68	6-3/8		3-5/16	3-3/16	2-1/4
1-3/4”	45	S1712F3	1.5	.68	6-3/8		3-5/16	3-3/16	3-7/32
1-7/8”	48	S1912F3	1.7	.77	6-3/8		3-5/16	1-3/16	3-7/32
2”	51	S2012F3	2.0	.91	6-3/8		6-23/64	3-3/16	3-7/32
2-1/4”	57	S2212F3	2.5	1.0	4-7/16		3-3/8	3-3/16	3-7/32

Modified Round

2”	51	S2012CC	2.0	.91	6-3/8		3-23/64	2-9/32	1-5/16
2-1/4”	57	S2212CC	2.2	1.0	6-10mm		3-.39	3-5/16	1-5/16
2-1/2”	64	S2512CC	2.5	1.1	6-10mm		3-.39	3-5/16	1-5/16

Retrac

2””	51	S2012FW*	2.0	.91	6-3/8		4-5/16	3-7mm	
2-1/4”	57	S2212FW*	2.2	1.0	6-7/16		4-3/8	1-5/16	2-1/4

Hole Opener

3-1/2”	89	S3512G0	5.7	2.6	8-1/2	6-1/2	1-1/2	1-1/4	2-1/4

1-3/8” / R35

Drifter Rods

R35 to T-38 (1-3/8” Hex)

Length		Part Number	Weight	
Feet	MM		Pounds	Kilograms
16’ 1-1/2”	4902	K8193NQ	85.6	38.8
18’ 1-1/2”	5525	K8217NQ	96.0	43.5

Button Bits

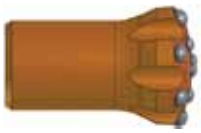
	Diameter		Part Number	Weight		Inserts			Holes	
	Inches	MM		Pounds	Kilos	Gauge	Mid	Face	Top	Side
Modified Chisel 	1-7/8”	48	S1937M	1.7	.77	5-7/16		2-3/8	1-1/4	2-7/25
Crown 	2”	51	S2037P0	2.0	.91	6-3/8		2-3/8	2-15/32	
Drop Center 	2-1/2”	64	S2537D0	2.5	1.1	6-7/16		3-3/8	3-15/32	

Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide

Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

Production Drilling

Choosing the right bit:
Many factors go into choosing the correct bit for your ground conditions and drilling practices. Production demands have changed the drilling industry over the past twenty years, most of the pneumatic hammers have been replaced by the harder hitting, faster drilling hydraulic hammers. We are constantly improving our manufacturing practices to produce bits that withstand the new machines. With our experience in the rock drilling industry we can suggest products, in various styles and configurations, for your particular rock drilling application.

	Face Style	Applications	Designation
	Standard X	For use in moderately abrasive or seamy broken rock conditions.	X0 
	HI-Duty X	For use in extremely abrasive rock and a longer carbide life is desired, as above.	Z0 
	Crown	For use in general applications.	C0  H0 
	Drop Center	For use in medium to hard rock applications, where a straight hole is ideal.	D0  4-wing  3-wing
	Flat Face	For use in hard to very hard rock applications.	FA  F4 
	Body Style		
	Retrac	Drop Center & Flat face styles are available in a retrac body for straighter holes and to facilitate the bits removal from the hole.	DW*  FW* 

150 Rope / 1-1/2” / R38

	Length		Part Number	Weight	
	Feet	MM		Pounds	Kilograms
Drifter Rods					
125R to 150R (1-1/4” Hex)	10’ 1-1/2”	3073	K4121CE	43.5	19.7
	12’ 1-1/2”	3683	K4145CE	51.8	23.5
	14’ 1-1/2”	4293	K4169CE	63.6	28.8
	16’ 1-1/2”	4902	K4193CE	72.4	32.8
	18’ 1-1/2”	5525	K4217CE	81.3	36.9
125R to 150R (1-3/8” Hex)	16’ 1-1/2”	4902	K8193CE	85.6	38.8
	18’ 1-1/2”	5525	K8217CE	96.0	43.5
Extension Rods					
Single Thread (1-1/2” Round)	10’	3050	J5120EE	52.4	23.9
	12’	3660	J5144EE	62.8	28.7
	14’	4266	J5168EE	73.3	33.5
Multilife (1-1/2” Round)	10’	3050	J5120FF	52.4	23.9
	12’	3660	J5144FF	62.8	28.7
	14’	4266	J5168FF	73.3	33.5
All Thread (1-1/2” Round)	10’	3050	J5120HH	52.4	23.9
	12’	3660	J5144HH	62.8	28.7
	14’	4266	J5168HH	73.3	33.5

	Diameter		Part Number	Weight	
	Inches	MM		Pounds	Kilograms
Couplings					
150 Rope	2-1/8”	54	CC150R0	3.5	1.6
Thin Wall	1-15/16”	49	CC150R0T	2.5	1.1
					
125 Rope to 150 Rope	2-3/16”	56	CA12515	4.2	2.1
150 Rope to T38	2-1/8”	54	CA15038	3.7	1.7

150 Rope / 1-1/2” / R38

	Diameter		Part Number	Weight		Inserts			Holes	
	Inches	MM		Pounds	Kilos	Gauge	Mid	Face	Top	Side
X-Design Bits										
	2-1/2”	64	T2515X0	3.6	1.6					
	2-3/4”	70	T2715X0	4.2	1.9					
	3”	76	T3015X0	4.8	2.2					
	3-1/2”	89	T3515X0	6.5	2.9					
	4”	102	T4015X0	8.7	3.9					
Button Bits										
Crown	2-1/2”	64	S2515C0	3.7	1.7	6-7/16	3-3/8	3-5/16	1-3/8	3-3/8
	2-3/4”	70	S2715C0	4.3	1.9	6-7/16	3-3/8	3-5/16	1-3/8	3-3/8
	3”	76	S3015H0	4.7	2.1	6-1/2	3-1/2	2-1/2	1-7/16	2-3/8
	3-1/2”	89	S3515H0	5.2	2.4	6-1/2	3-1/2	2-1/2	1-1/2	1-1/2
	4”	102	S4015H0	8.4	3.8	7-9/16	4-1/2	3-1/2	1-1/2	1-1/2
Drop Center	2-1/2”	64	S2515D0	3.7	1.7	6-7/16	3-3/8	1-5/16	3-5/16	
	2-3/4”	70	S2715D0	4.3	1.9	6-7/16	3-3/8	2-5/16	3-3/8	
	3”	76	S3015D0	4.7	2.1	6-7/16	3-7/16	1-7/16	1-23/64	
	3-1/2”	89	S3515D0	5.2	2.4	6-1/2	3-1/2	2-7/16	3-3/8	
	4”	102	S4015D0	8.4	3.8	8-9/16	4-1/2	2-3/8	4-3/8	
Flat Face	2-1/2”	64	S2515F0	3.7	1.7	6-7/16	4-3/8		2-3/8	
	2-3/4”	70	S2715F0	4.3	1.9	6-7/16	5-3/8		2-7/16	
	3”	76	S3015FA	4.7	2.1	8-7/16	5-7/16		2-3/8	2-3/8
	3-1/2”	89	S3515FA	5.2	2.4	8-1/2	5-1/2		2-7/16	
	4”	102	S4015FA	8.4	3.8	8-9/16	6-1/2		2-7/16	

Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide

Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

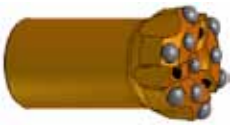
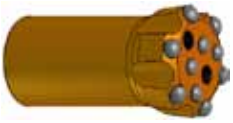
T38 / 1-1/2” / 38MM

	Length		Part Number	Weight	
	Feet	MM		Pounds	Kilograms
Carbex Rods					
1-1/4” Hex	10’	3050	K4120QQ	45.6	20.7
	12’	3660	K4144QQ	54.4	24.7
	14’	4265	K4168QQ	59.8	27.1
Drifter Rods					
125R to T38 (1-1/4” Hex)	10’ 1-1/2”	3073	K4121CQ	43.5	19.7
	12’ 1-1/2”	3683	K4145CQ	51.8	23.5
	14’ 1-1/2”	4293	K4169CQS	63.6	28.8
	16’ 1-1/2”	4902	K4193CQS	72.4	32.8
	18’ 1-1/2”	5525	K4217CQS	81.3	36.9
125R TO T38 (1-3/8” Hex)	16’ 1-1/2”	4902	K8193CQS	85.6	38.8
	18’ 1-1/2”	5525	K8217CQS	96.0	43.5
Extension Rods					
Single Thread (1-1/2” Round)	6’	1830	H5072RR	31.4	17.8
	8’	2440	H5096RR	41.9	19.0
	10’	3050	H5120RR	52.4	23.7
	12’	3660	H5144RR	62.8	28.4
	14’	4265	H5168RR	73.3	33.2
	16’	4875	H5192RR	83.8	38.0
	18’	5485	H5216RR	94.3	42.8
Tandem (1-1/2” Round)	10’	3050	H5120SS	52.4	23.7
	12’	3660	H5144SS	62.8	28.4
	14’	4265	H5168SS	73.3	33.2
	16’	4875	H5192SS	83.8	38.0
All Thread (1-1/2” Round)	10’	3050	J5120GG	45.6	21.4
	12’	3660	J5144GG	56.6	25.6
	14’	4270	J5168GG	66.0	29.9
Male/Female (1-1/2” Round)	4’ 4”	1320	J5052RQ	24.9	11.2
	5’ 4”	1626	J5064RQ	30.2	13.6
	6’ 4”	1930	J5076RQ	35.4	16.0
	10’ 4”	3150	J5124RQ	56.4	25.5
	12’ 4”	3760	J5148RQ	66.9	30.3

Flats available upon request.

	Diameter		Part Number	Weight	
	Inches	MM		Pounds	Kilograms
Couplings					
T38	2-1/8”	54	CCT3800	3.9	1.8
125 Rope to T38	2-1/8”	54	CA12538	5.1	2.4
150 Rope to T38	2-1/8”	54	CA15038	3.7	1.7
T38 to T45	2-1/2”	64	CA38045	7.0	3.1

T38 / 1-1/2” / 38MM

	Diameter		Part Number	Weight		Inserts			Holes	
	Inches	MM		Pounds	Kilos	Gauge	Mid	Face	Top	Side
X-Design Bits										
	2-1/2”	64	T2538X0	3.6	1.6					
	2-3/4”	70	T2738X0	4.2	1.9					
	3”	76	T3038X0	4.8	2.2					
	3-1/2”	89	T3538X0	6.5	2.9					
	4”	102	T4038X0	8.7	3.9					
Button Bits										
Crown	2-1/2”	64	S2538C0	3.7	1.7	6-7/16	3-3/8	3-5/16	1-3/8	3-3/8
	2-3/4”	70	S2738C0	4.3	1.9	6-7/16	3-3/8	3-5/16	1-3/8	3-3/8
	3”	76	S3038H0	4.7	2.1	6-1/2	3-1/2	2-1/2	1-7/16	2-3/8
	3-1/2”	89	S3538H0	5.2	2.4	6-1/2	3-1/2	2-1/2	1-1/2	1-1/2
	4”	102	S4038H0	8.4	3.8	7-5/8	4-1/2	3-1/2	1-1/2	1-1/2
Drop Center	2-1/2”	64	S2538D0	3.7	1.7	6-7/16	3-3/8	1-5/16	3-5/16	
	2-3/4”	70	S2738D0	4.3	1.9	6-7/16	3-3/8	2-5/16	3-3/8	
	3”	76	S3038D0	4.7	2.1	6-7/16	3-7/16	1-7/16	3-23/64	
	3-1/2”	89	S3538D0	5.2	2.4	6-1/2	3-1/2	2-7/16	3-3/8	
	4”	102	S4038D0	8.4	3.8	8-9/16	4-1/2	2-3/8	4-3/8	
Flat Face (HI-Duty)	2-1/2”	64	S2538F0	3.7	1.7	6-7/16	4-3/8		2-3/8	
	2-3/4”	70	S2738F0	4.3	1.9	6-7/16	5-3/8		2-7/16	
	3”	76	S3038FA	4.7	2.1	8-7/16	5-7/16		1-3/8	2-3/8
	3-1/2”	89	S3538FA	5.2	2.4	8-1/2	5-1/2		2-7/16	
	4”	102	S4038FA	8.4	3.8	8-9/16	6-1/2		2-7/16	
Flat Face										
	3”	76	S3038F4	4.7	2.1	8-7/16	6-3/8		2-3/8	
	3-1/2”	89	S3538F4	5.2	2.4	8-1/2	6-7/16		2-1/2	2-3/8
Retrac	2-1/2”	64	S2538DW*	5.0	2.3	6-7/16	4-7/16		2-1/4	1-3/8
	2-3/4”	70	S2738DW*	5.8	2.6	6-7/16	3-3/8	2-5-16	3-3/8	
	3”	76	S3038DW*	6.6	3.0	6-7/16	3-7/16	2-9mm	3-3/8	
	3-1/2”	89	S3538DW*	11.0	5.0	8-1/2	4-7/16	3-3/8	4-3/8	
Drop Center	4”	102	S4038DW*	14.6	6.6	8-9/16	4-1/2	1-7/16	4-3/8	
	2-1/2”	64	S2538FW*	5.0	2.3	6-7/16	4-7/16		2-1/4	1-3/8
	3”	76	S3038FW*	6.6	3.0	8-7/16	4-7/16		2-1/2	2-1/4
	3-1/2”	89	S3538FW*	11.0	5.0	8-1/2	6-7/16		2-1/2	2-3/8
Flat Face	4”	102	S4038FW*	14.6	6.6	8-1/2	7-1/2		2-7/16	2-3/8

Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide

Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

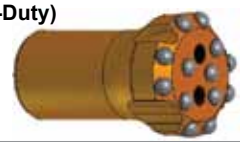
T45 / 1-3/4” / 45MM

	Length		Part Number	Weight	
	Feet	MM		Pounds	Kilograms
Carbex Rods					
1-1/2” Hex	10’	3050	K5120TT	59.3	26.9
	12’	3660	K5144TT	70.8	32.1
	14’	4265	K5168TT	82.2	37.3
Extension Rods					
Single Thread (1-3/4” Round)	10’	3050	H6120TT	71.1	32.3
	12’	3660	H6144TT	85.3	38.7
	14’	4265	H6168TT	99.5	45.1
	20’	6095	H6240TT	142.2	64.5
Tandem (1-3/4” Round)	10’	3050	H6120YY	71.1	32.3
	12’	3660	H6144YY	85.3	38.7
	14’	4265	H6168YY	99.5	45.1
	20’	6095	H6240YY	142.2	64.5
All Thread (1-3/4” Round)	10’	3050	J6120XX	64.5	29.3
	12’	3660	J6144XX	77.4	35.1
	14’	4270	J6168XX	90.3	41.0
Male/Female (1-3/4” Round)	6’ 4”	1930	J6076T2	51.0	23.1
	8’ 4”	2540	J6100T2	65.2	29.6
	10’ 4”	3150	J6124T2	79.4	36.0
	12’ 4”	3760	J6148T2	93.6	42.5
	14’ 4”	4370	J6172T2	108.8	49.4
	20’ 4”	6198	J6244T2	150.5	68.3

Flats available upon request.

	Diameter		Part Number	Weight	
	Inches	MM		Pounds	Kilograms
Carbex Rods					
T45	2-1/2”	64	CCT4500	6.0	2.7
					
T38 to T45	2-1/2”	64	CA38045	7.0	3.1
T45 to T51	3”	76	CA45051	6.4	2.9

T45 / 1-3/4” / 45MM

	Inches	MM	Part Number	Pounds	Kilos	Inserts Gauge	Inserts Mid	Inserts Center	Holes Top	Holes Side
X-Design Bits										
	3”	76	T3045X0	5.2	2.3					
	3-1/2”	89	T3545X0	6.8	3.1					
	4”	102	T4045X0	11.7	5.4					
Button Bits										
Crown	3”	76	S3045H0	5.1	2.3	6-1/2	3-1/2	2-1/2	1-7/16	2-3/8
	3-1/2”	89	S3545H0	6.7	3.0	6-1/2	3-1/2	2-1/2	2-1/2	
	4”	102	S4045H0	12.3	5.6	7-5/8	6-1/2	3-1/2	2-1/2	
	4-1/2”	115	S4545H0	14.4	6.5	7-5/8	4-9/16	3-9/16	2-9/16	
Drop Center	3”	76	S3045D0	5.1	2.3	6-7/16	3-7/16	1-7/16	3-3/8	
	3-1/2”	89	S3545D0	6.7	3.0	6-1/2	3-1/2	2-7/16	3-3/8	
	4”	102	S4045D0	12.3	5.6	8-9/16	4-1/2	1-7/16	3-3/16	
	4-1/2”	115	S4545D0	14.4	6.5	9-9/16	3-9/16	2-1/2	3-1/2	
Flat Face (HI-Duty)	3”	76	S3045FA	5.1	2.3	8-7/16	6-3/8		2-7/16	2-7/16
	3-1/2”	89	S3545FA	6.7	3.0	8-1/2	5-1/2		2-1/2	
	4”	102	S4045FA	12.3	5.6	8-9/16	6-1/2		2-9/16	
	4-1/2”	115	S4545FA	14.4	6.5	8-9/16	6-9/16		2-5/8	
Flat Face										
	3”	76	S3045F4	5.1	2.3	8-7/16	6-3/8		2-7/16	
	3-1/2”	89	S3545F4	6.7	3.0	8-7/16	6-3/8		2-7/16	2-3/8
Retrac	3”	76	S3045DW*	6.6	3.0	6-7/16	3-7/16	2-5/16	3-3/8	
	3-1/2”	89	S3545DW*	11.0	5.0	8-1/2	4-7/16	1-3/8	4-7/16	
	4”	102	S4045DW*	14.6	6.6	8-9/16	1-7/16	4-1/2	4-7/16	
Drop Center	4-1/2”	115	S4545DW*	16.4	7.4	8-9/16	4-9/16	3-1/2	4-7/16	
	3”	76	S3045FW*	6.6	3.0	8-7/16	4-7/16		2-1/2	2-1/4
	3-1/2”	89	S3545FW*	11.0	5.0	8-1/2	6-7/16		2-1/2	2-3/8
	4”	102	S4045FW*	14.6	6.6	8-1/2	7-1/2		2-7/16	2-3/8
Flat Face	4-1/2”	115	S4545FW*	16.4	7.4	8-9/16	7-9/16		2-9/16	

Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide

Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

T51 / 2” / 51MM

Extension Rods

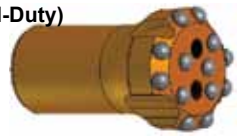
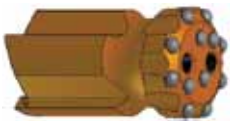
	Length		Part Number	Weight	
	Feet	MM		Pounds	Kilograms
Single Thread (2” Round)					
	12’	3660	H7144ZZ	112.8	51.2
	14’	4265	H7168ZZ	131.6	59.7
	20’	6095	H7240ZZ	188.0	85.3
	24’	7315	H7244ZZ	225.6	102.3
Male/Female (2” Round)					
	12’ 4”	3760	J7148Z3	125.3	56.8
	14’ 4”	4370	J7172Z3	145.0	65.8
	20’ 4”	6198	J7244Z3	200.5	90.9

Flats available upon request.

Couplings

	Diameter		Part Number	Weight	
	Inches	MM		Pounds	Kilograms
T51	3”	76	CCT5100	10.5	4.7
Thin Wall	2-13/16”	71.4	CCT5100T	8.5	3.9
T51 with flats	3”	76	CCT5100F	10.5	4.7
					
T45 to T51	3”	76	CA45051	6.4	2.9

T51 / 2” / 51MM

	Inches	MM	Part Number	Pounds	Kilos	Inserts Gauge	Inserts Mid	Inserts Center	Holes Top	Holes Side
HI-Duty X-Design Bits										
										
	4-1/2”	115	T4551Z0	13.6	6.2					
	5”	127	T5051Z0	15.4	7.0					
Button Bits										
Crown	3-1/2”	89	S3551H0	8.4	3.8	2-1/2	3-1/2	6-9/16	2-1/2	2-3/8
	4”	102	S4051H0	10.5	4.8	7-9/16	4-1/2	3-1/2	2-9/16	2-3/8
	4-1/2”	115	S4551H0	13.6	6.2	7-5/8	4-9/16	3-9/16	2-5/8	
	5”	127	S5051H0	15.4	7.0	8-5/8	5-9/16	4-9/16	2-5/8	
Drop Center	3-1/2”	89	S3551D0	8.4	3.8	6-9/16	3-1/2	2-3/8	3-1/2	
	4”	102	S4051D0	10.5	4.8	8-9/16	4-1/2	1-7/16	4-7/16	
	4-1/2”	115	S4551D0	13.6	6.2	8-9/16	4-9/16	2-1/2	3-1/2	
	5”	127	S5051D0	15.4	7.0	8-5/8	4-9/16	2-7/16	4-7/16	
	5-1/2”	140	S5551D0	17.2	7.8	8-5/8	4-9/16	2-1/2	2-9/16	
Flat Face (HI-Duty)	3-1/2”	89	S3551FA	8.4	3.8	6-9/16	6-1/2		2-1/2	2-3/8
	4”	102	S4051FA	10.5	4.8	8-9/16	6-1/2		2-9/16	
	4-1/2”	115	S4551FA	13.6	6.2	8-9/16	6-9/16		2-5/8	
	5”	127	S5051FA	15.4	7.0	8-5/8	7-9/16		2-5/8	
Flat Face										
	3-1/2”	89	S3551F4	10.5	4.8	8/1/2	6-7/16		2-1/2	2-3/8
Retrac	3-1/2”	89	S3551DW*	10.5	4.8	8-1/2	4-7/16	1-3/8	4-7/16	
	4”	102	S4051DW*	14.6	6.6	8-9/16	4-1/2	1-7/16	4-7/16	
	4-1/2”	115	S4551DW*	16.4	7.4	8-9/16	4-9/16	2-7/16	4-7/16	
	5”	127	S5051DW*	18.2	8.2	8-9/16	4-9/16	2-1/2	4-1/2	
Drop Center	5-1/2”	140	S5551DW*	20.0	9.0	8-9/16	4-9/16	2-1/2	4-1/2	
	3-1/2”	89	S3551FW*	10.5	4.8	8-1/2	6-7/16		2-1/2	2-3/8
	4”	102	S4051FW*	14.6	6.6	8-1/2	7-1/2		2-7/16	2-3/8
	4-1/2”	115	S4551FW*	16.4	7.4	8-9/16	7-9/16		2-9/16	2-3/8
Flat Face	5”	127	S5051FW*	18.2	8.2	8-9/16	7-9/16		2-9/16	3-5/16

Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide

Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

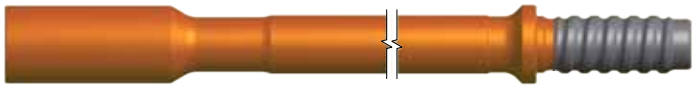
B60 / 2-3/8” / 60MM

Extension Rods

Guide Rod (2-3/8” Round)

Length		Part Number	Weight	
Feet	MM		Pounds	Kilograms
12’	3660	J9150PPG	112.8	51.2
14’	4265	J9174PPG	131.6	59.7

Male/Female (2-3/8” Round)



12’ 4”	3760	J9150P4FR	125.3	56.8
14’ 4”	4370	J9174P4FR	145.0	65.8
20’ 4”	6198	J9246P4FR	200.5	90.9

Button Bits

Drop Center

Diameter		Part Number	Weight		Inserts			Holes	
Inches	MM		Pounds	Kilos	Gauge	Mid	Center	Top	Side
4”	102	S4060D0	10.5	4.8	8-7/16	4-1/2	2-7/16	4-7/16	
4-1/2”	115	S4560D0	13.6	6.2	8-7/16	4-1/2	2-7/16	4-7/16	
5”	127	S5060D0	15.4	7.0	8-7/16	4-1/2	2-7/16	4-7/16	
5-1/2”	140	S5560D0	26.6	12.1	8-5/8	4-5/8	3-1/2	4-9/16	
6”	152	S6060D0	30.4	13.8	8-5/8	4-5/8	3-1/2	4-9/16	

Retrac

4”	102	S4060DW*	14.6	6.6	8-9/16	4-9/16	3-1/2	4-7/16	
4-1/2”	115	S4560DW*	16.4	7.4	8-9/16	4-9/16	3-1/2	4-7/16	
5”	127	S5060DW*	18.2	8.2	8-9/16	4-9/16	3-1/2	4-7/16	
5-1/2”	140	S5560DW*	35.4	16.1	8-5/8	4-5/8	3-1/2	4-1/2	
6”	152	S6060DW*	41.6	18.9	8-5/8	4-5/8	3-1/2	4-//16	

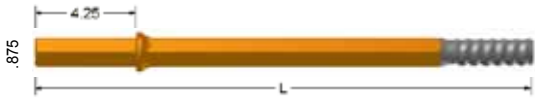
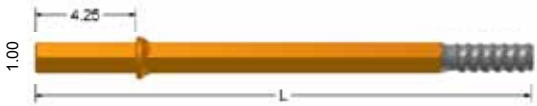
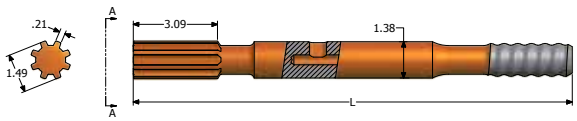
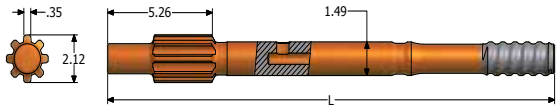
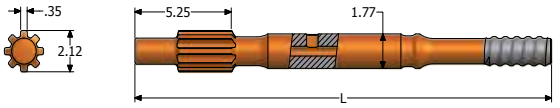
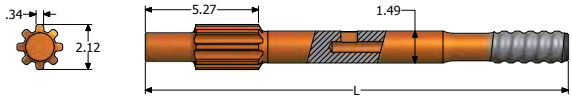
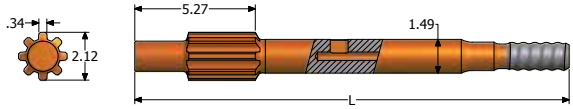
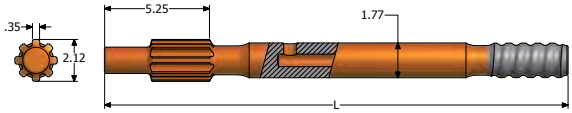
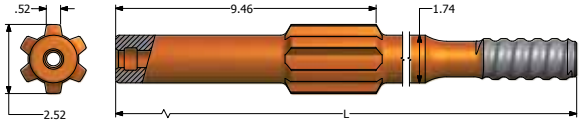
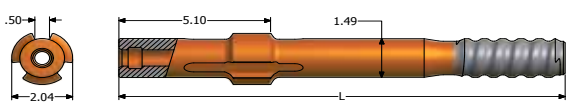
Drop Center

Button Bits are available with Standard, Parabolic, Ballistic, or Conical Carbide

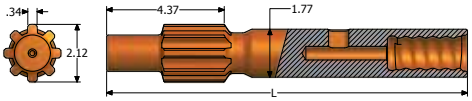
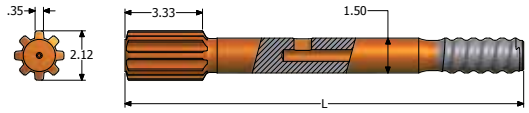
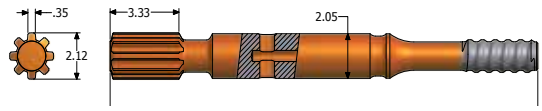
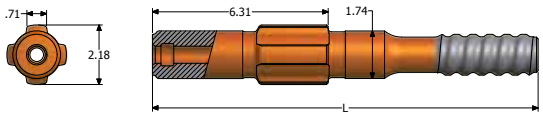
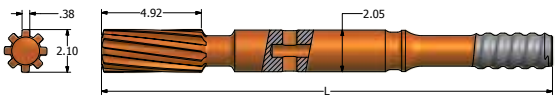
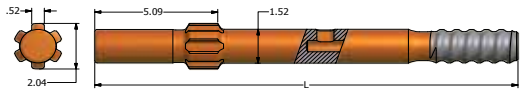
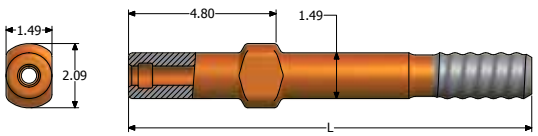
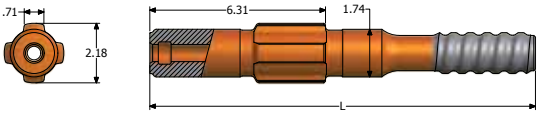
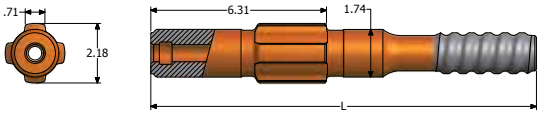
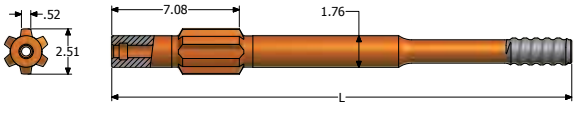
Parabolic = P as the last digit Ballistic = B as the last digit Conical = C as the last digit

Striking Bars

Striking Bars

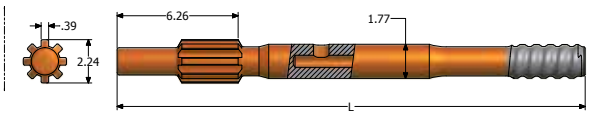
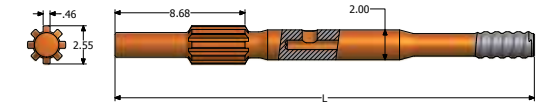
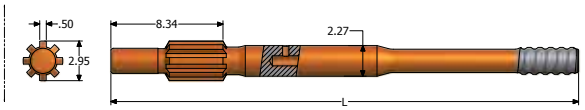
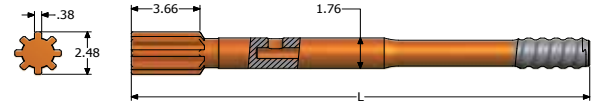
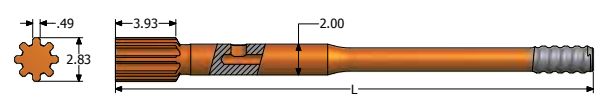
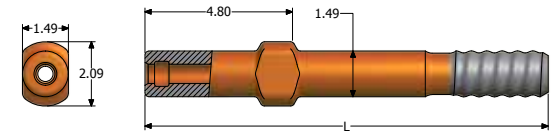
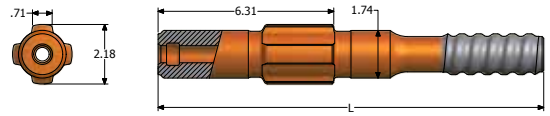
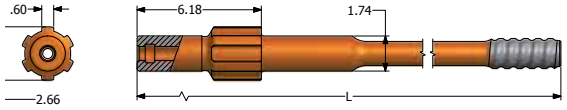
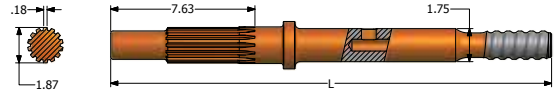
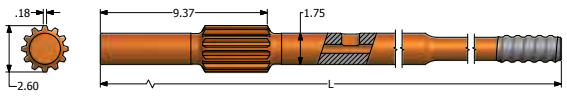
	Drill	Thread	Part Number	Length Inches	Length MM	Weight Pounds	Weight Kilos
Hex Shank / Atlas Copco							
		100R (R25)	P02B100	16.0	405.0	2.5	1.13
		100R (R25) 125R (R32)	P04B100 P04B120	14.5 14.5	368.0 368.0	3.0 3.0	1.36 1.36
	Atlas Copco 1132	125 (R32)	P133X120	16.1	410	5.3	2.4
	Atlas Copco 1038/1238	T38	P107X380	22.6	575	10.3	4.7
	Atlas Copco 1238	T38	P108X380	22.6	575	10.3	4.7
	Atlas Copco 1036HB, 1038HB, 1238HB	125R (R32) 150R (R38) T38 T45	P28X120 P28X150 P28X380 P28X450	19.68 19.68 19.68 19.68	500.0 500.0 500.0 500.0	11.0 11.0 11.0 12.0	4.98 4.98 4.98 5.44
	Atlas Copco 1038HD, 1238HD	125R (R32) 150R (R38) T38	P29X120 P29X150 P29X380	19.68 19.09 19.09	500.0 485.0 485.0	11.0 11.0 11.0	4.98 4.98 4.98
	Atlas Copco 1038HL, 1238HL	150R (R38) T38 T45 T45	P32X150 P32X380 P32X450 P32X45S	23.23 23.23 23.23 22.64	590.0 590.0 590.0 575	11.0 11.0 11.0 12.8	4.98 4.98 4.98 5.80
	Atlas Copco BBE56US, BBE57	T38 T45	P42J380 P42J450	21.1 21.1	536.0 536.0	11.4 11.4	5.17 5.17
	Atlas Copco COP 125, 130, 131	150R (R38) T38	P27J150 P27J380	15.0 15.0	381.0 381.0	6.0 6.0	2.72 2.72

*Blow Tube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=9/16" L=5/8" N=3/4" X=External Flush

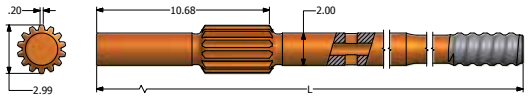
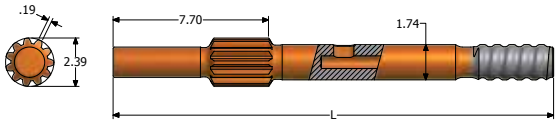
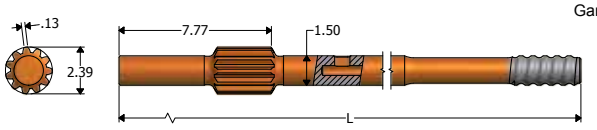
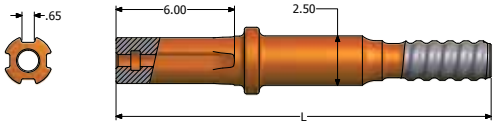
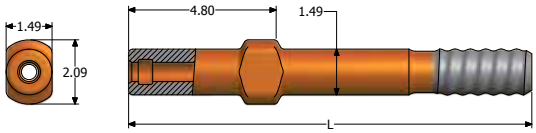
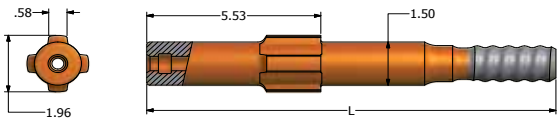
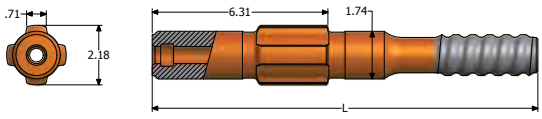
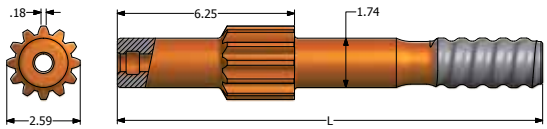
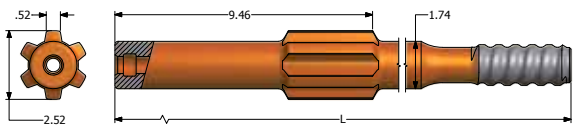
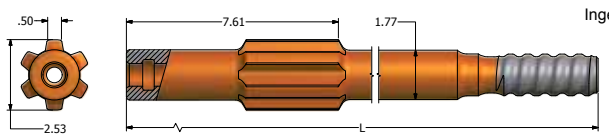
	Drill	Thread	Part Number	Length Inches	Length MM	Weight Pounds	Weight Kilos
Atlas Copco / Chicago Pneumatic / Furukawa							
	Atlas Copco 1032HD	125R (R32) 150R (R38) FEMALE	P22X120F P22X150F	13.81 13.81	351.0 351.0	7.7 7.7	3.49 3.49
	Atlas Copco COP1440	150R (R38) T38	P46X150 P46X380	17.1 17.1	435.0 435.0	8.5 8.5	3.85 3.85
	Atlas Copco COP1550 COP1550 (2.05")	125R (R32) 150R (R38) T38 T38	P47X120 P47X150 P47X380 P47X380S	20.6 20.6 20.6 20.6	525.0 525.0 525.0 525	9.2 9.2 9.2 13.0	4.17 4.17 4.17 5.90
	Atlas Copco HM750, HM751-RD500	125R (R32) 150R (R38) T38 T45	P36J120 P36J150 P36J380 P36J450	14.0 14.0 15.0 15.0	356.0 356.0 381.0 381.0	7.1 7.6 7.6 8.5	3.22 3.44 3.44 3.85
	Atlas Copco 1850	T45 T51	P57X450 P57X510	22.2 22.2	565 565	15.8 15.8	7.2 7.2
	Atlas Copco 131PW	T38	P101X380	17.5	445	8	3.63
	Chicago Pneumatic 450N, 450DR	125R (R32) 150R (R38) T38	P24J120 P24J150 P24J380	13.12 13.12 13.12	333.0 333.0 333.0	5.6 5.6 5.6	2.54 2.54 2.54
	Chicago Pneumatic CP451	125R (R32) 150R (R38) T38 T45	P36J120 P36J150 P36J380 P36J450	14.0 14.0 15.0 15.0	356.0 356.0 381.0 381.0	7.1 7.6 7.6 8.5	3.22 3.44 3.44 3.85
	Furukawa HD120, M120, PD200	125R (R32) 150R (R38) T38 T45	P36J120 P36J150 P36J380 P36J450	14.0 14.0 15.0 15.0	356.0 356.0 381.0 381.0	7.1 7.6 7.6 8.5	3.22 3.44 3.44 3.85
	Furukawa HD200, HD300	T38 T45	P72L380 P72L450	25.5 25.5	648.0 648.0	14.5 14.5	6.57 6.57

*Blow Tube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=9/16" L=5/8" N=3/4" X=External Flush

Striking Bars

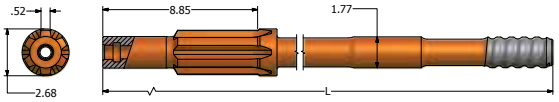
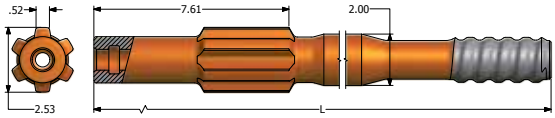
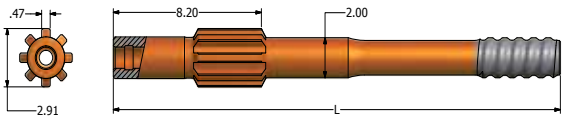
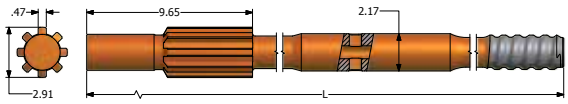
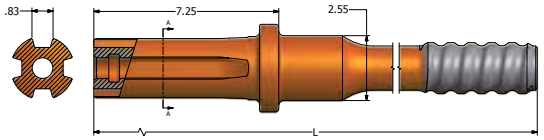
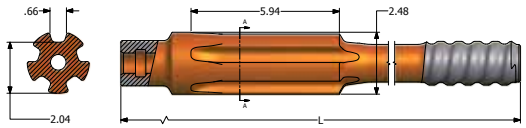
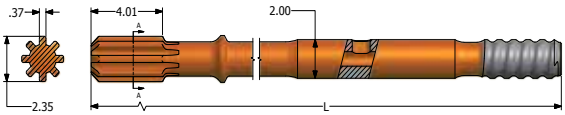
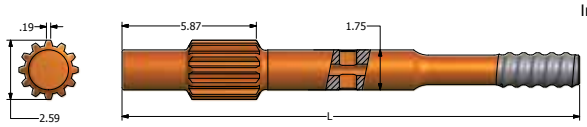
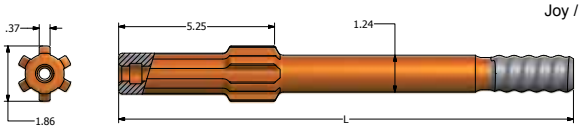
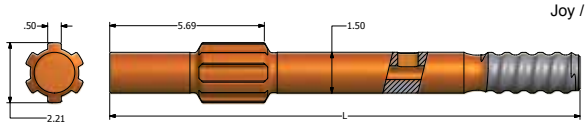
	Drill	Thread	Part Number	Length Inches	Length MM	Weight Pounds	Weight Kilos
Furukawa / Gardner Denver							
	Furukawa	T38	P71X380	24.4	620.0	13.5	6.12
	HD609	T45	P71X450	24.4	620.0	14.1	6.40
	Furukawa	T38	P68X380	28.0	710.0	20.0	9.07
	HD612	T45	P68X450	28.0	710.0	20.0	9.07
	Furukawa	T51	P76X510	27.5	700.0	32.0	14.51
	HD615						
	Furukawa	T45	P121X450	24.4	620	16.8	7.61
	HD709						
	Furukawa	T45	P106X450	31.0	788	25.0	11.36
	HD712						
	Gardner Denver	125R (R32)	P24J120	13.12	333.0	5.6	2.54
	99, 123	150R (R38)	P24J150	13.12	333.0	5.6	2.54
		T38	P24J380	13.12	333.0	5.6	2.54
	Gardner Denver	125R (R32)	P36J120	14.0	356.0	7.1	3.22
	PR55, PR123	150R (R38)	P36J150	14.0	356.0	7.6	3.44
		T38	P36J380	15.0	381.0	7.6	3.44
		T45	P36J450	15.0	381.0	8.5	3.85
	Gardner Denver	T38	P70L38T	28.0	711.0	13.0	5.89
	PR66	T45	P70L45T	28.0	711.0	14.0	6.35
	Gardner Denver	150R (R38)	P25X150	23.3	632.0	11.0	4.98
	HPR1	T38	P25X380	23.3	632.0	11.0	4.98
		T45	P25X450	23.3	632.0	13.0	5.89
	Gardner Denver	T38	P35X38S	28.5	724	17.5	7.95
	HPR1H	T38	P35X380	29.0	737.0	17.8	8.07
		T45	P35X450	29.0	737.0	17.8	8.07

*Blow Tube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=9/16" L=5/8" N=3/4" X=External Flush

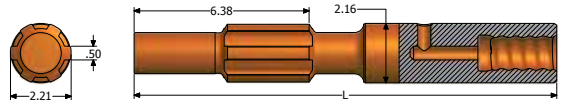
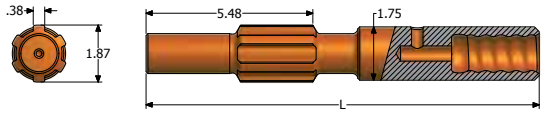
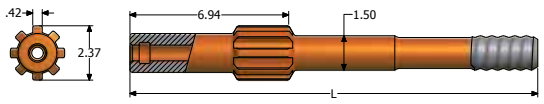
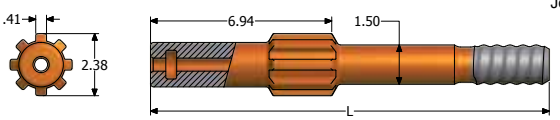
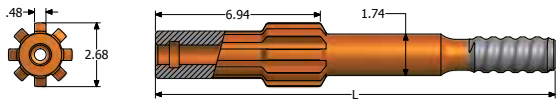
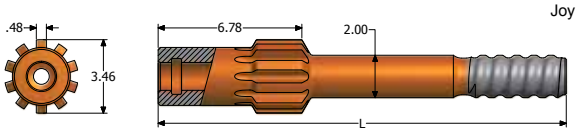
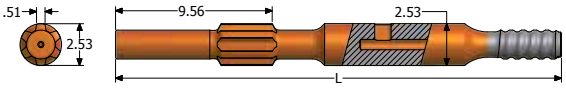
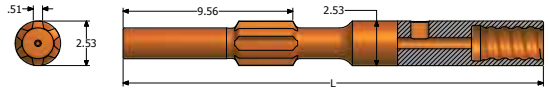
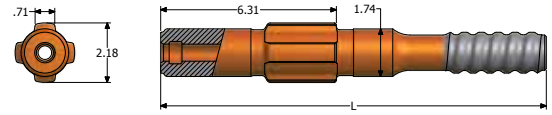
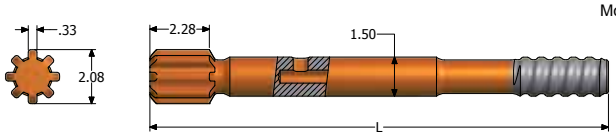
	Drill	Thread	Part Number	Length Inches	Length MM	Weight Pounds	Weight Kilos
Gardner Denver / Ingersoll Rand							
	Gardner Denver	T45	P17X450	36.0	914.4	28.6	12.97
	HPR2	T51	P17X510	36.0	914.4	28.6	12.97
	HPR51	T51	P17X510S				
	Gardner Denver	T45	P129X450	21.8	554	15.0	6.82
	HPR3818						
	Gardner Denver	T38	P126X380	27.6	700	15.2	6.90
	HPRHC						
	Gardner Denver	T51	P62R510	19.0	483	12.8	5.82
	VL170						
	Ingersoll Rand	125R (R32)	P24J120	13.12	333.0	5.6	2.54
	45, 475	150R (R38)	P24J150	13.12	333.0	5.6	2.54
		T38	P24J380	13.12	333.0	5.6	2.54
	Ingersoll Rand	125R (R32)	P85D120	13.0	333.0	5.4	2.44
	YD90 M						
	Ingersoll Rand	125R (R32)	P36J120	14.0	356.0	7.1	3.22
	VL120, VL140,	150R (R38)	P36J150	14.0	356.0	7.6	3.44
	EVL 130, F16,	T38	P36J380	15.0	381.0	7.6	3.44
	URD550A	T45	P36J450	15.0	381.0	8.5	3.85
	Ingersoll Rand	T38	P67J380	13.75	349.0	7.0	3.17
	VL130/140	T45	P67J450	13.75	349.0	7.2	3.27
	Ingersoll Rand	T38	P42J380	21.1	537.0	11.4	5.17
	YH60	T45	P42J450	21.1	537.0	11.4	5.17
	Ingersoll Rand	T38	P84N380	19.25	489.0	10.6	4.80
	YH65	T45	P84N450	19.25	489.0	10.7	4.85

*Blow Tube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=9/16" L=5/8" N=3/4" X=External Flush

Striking Bars

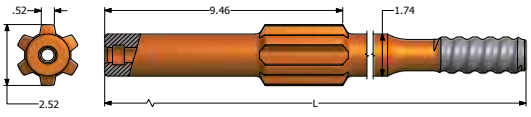
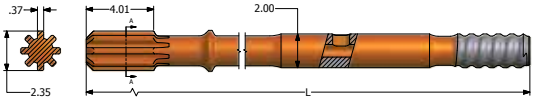
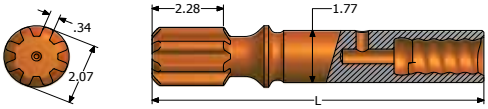
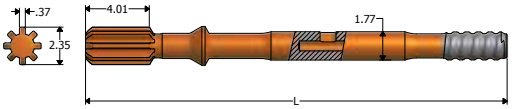
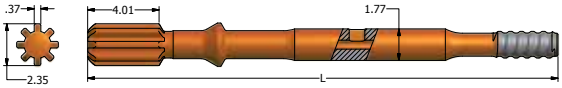
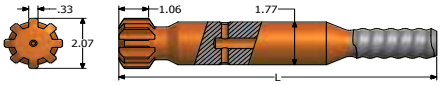
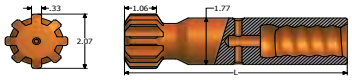
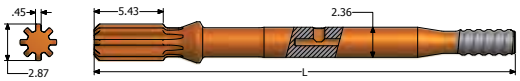
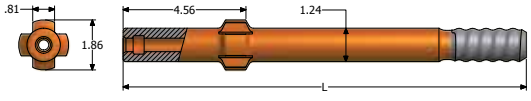
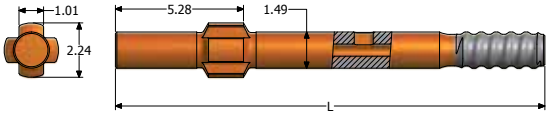
	Drill	Thread	Part Number	Length Inches	Length MM	Weight Pounds	Weight Kilos
Ingersoll Rand / Joy							
	Ingersoll Rand YH65RP	T45	P84N45B	27.5	700.0	16.0	7.25
	Ingersoll Rand YH80A	T38 T45 T51	P49N380 P49N450 P49N510	19.5 19.5 19.5	495.0 495.0 495.0	13.0 13.0 13.0	5.89 5.89 5.89
	Ingersoll Rand YH95	T45 T51	P83Q450 P83Q510	24.75 24.75	625.0 625.0	17.0 17.0	7.11 7.11
	Ingersoll Rand YH110VRP YH135RP	T45 T51	P60X45B P60X51B	35.4 35.4	900.0 900.0	32.0 32.0	14.51 14.51
	Ingersoll Rand VL671 4-FLUTE	T51	P65N510	19.52	496.0	14.5	6.57
	Ingersoll Rand VL671 5-FLUTE	T38 T45	P66N380 P66N450	21.0 21.0	533.0 533.0	12.8 12.8	5.80 5.8
	Ingersoll Rand VL672	T45 T45 T51	P78X45B P78X45LB P78X51B	26.4 30.3 26.4	670.0 770.0 670.0	11.6 18.4 17.6	7.98 8.40 7.98
	Ingersoll Rand F17V	T38	P64X380	19.94	506.0	12.7	5.76
	Joy / Cannon / Sullivan VCR150	125R (R32) 150R (R38) T38	P30F120 P30F150 P30F380	15.23 15.23 15.23	387.0 387.0 387.0	5.6 6.0 6.0	2.54 2.72 2.72
	Joy / Cannon / Sullivan JH2, CH38	125R (R32) 150R (R38) T38	P26X120 P26X150 P26X380	17.5 17.5 18.0	439.0 445.0 457.0	8.0 8.0 8.0	3.62 3.62 3.62

*Blow Tube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=9/16" L=5/8" N=3/4" X=External Flush

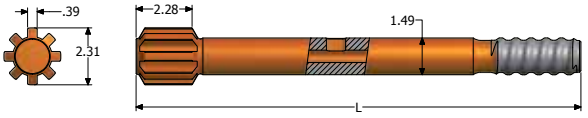
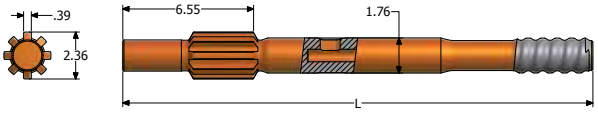
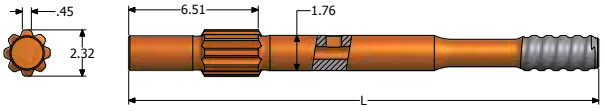
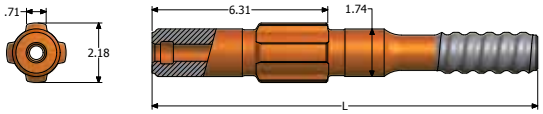
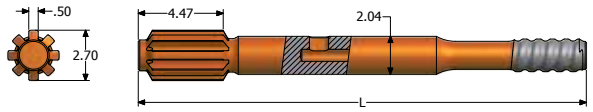
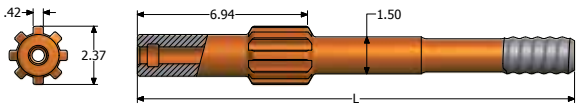
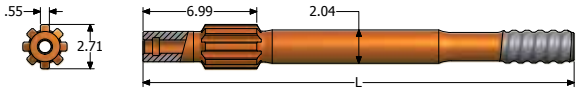
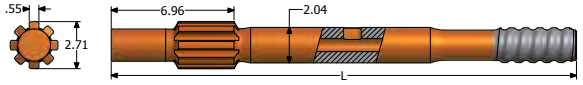
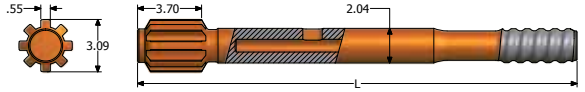
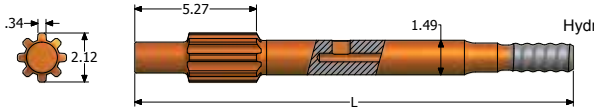
	Drill	Thread	Part Number	Length Inches	Length MM	Weight Pounds	Weight Kilos
Joy / Krupp / Mitsubishi / Montabert							
	Joy / Cannon / Sullivan JH2, CH38 FEMALE	125R (R32) T38	P26X12F P26X38F	15.38 15.38	388.0 388.0	17.5 17.5	7.93 7.93
	Joy / Cannon / Sullivan CH32 FEMALE	125R (R32)	P19X12F	13.0	330.0	6.25	2.83
	Joy / Cannon / Sullivan VCR 260/360/460 CVR460	125R (R32) 150R (R38) T38 T45	P48L120 P48L150 P48L380 P48L450	17.75 17.75 17.75 15.25	451.0 451.0 451.0 387.0	7.8 7.8 7.8 9.6	3.53 3.53 3.53 4.35
	Joy / Cannon / Sullivan VCR261	150R (R38) T38 T45	P51N150 P51N380 P51N450	15.25 15.25 15.25	387.0 387.0 387.0	7.8 7.8 9.6	3.53 3.53 4.35
	Joy / Cannon / Sullivan VCR361	T38 T45	P52N380 P52N450	17.0 17.0	432.0 432.0	11.0 11.0	4.99 4.99
	Joy / Cannon / Sullivan VCR280	T51	P69T510	19.25	489.0	20.0	9.07
	Krupp / John Henry HB101 John Henry JHRD1	150R (R38) T38 T45 T51	P54X150 P54X380 P54X450 P54X510	27.18 27.18 27.18 27.18	690.0 690.0 690.0 690.0	26.0 26.0 26.0 26.0	11.79 11.79 11.79 11.79
	Krupp / John Henry HB101 John Henry JHRD1 FEMALE	T38 T45	P54X380F P54X450F	23.25 23.25	590.0 590.0	23.0 22.0	10.43 9.98
	Mitsubishi TR300, TR400	125R (R32) 150R (R38) T38 T45	P36J120 P36J150 P36J380 P36J450	14.0 14.0 15.0 15.0	356.0 356.0 381.0 381.0	7.1 7.6 7.6 8.5	3.22 3.44 3.44 3.85
	Montabert HC40	125R (R32) T38	P41X120 P41X380	17.25 17.25	447.0 447.0	7.7 8.0	3.50 3.62

*Blow Tube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=9/16" L=5/8" N=3/4" X=External Flush

Striking Bars

	Drill	Thread	Part Number	Length Inches	Length MM	Weight Pounds	Weight Kilos
Montabert / Tamrock							
	Montabert H100	T38 T45	P42J380 P42J450	21.1 21.1	536.0 536.0	11.4 11.4	5.17 5.17
	Montabert HC120R	T45 T45 T51	P78X45B P78X45LB P78X51B	26.4 30.3 26.4	670.0 770.0 670.0	11.6 18.5 11.6	7.98 8.40 7.98
	Montabert HC 40/50	125R (R32)	P128X12F	10.6	274	9.0	4.10
	Montabert HC109	T45	P127X45B	20.0	508	19.9	9.02
	Montabert HC110/120	T38	P116X380R	26.4	670	15.8	7.16
	Montabert HC20	125R (R32)	P20X120	11.3	287	4.0	1.82
	Montabert HC20 FEMALE	125R (R32)	P20X12F	7.4	188	6.3	2.84
	Montabert HC200A	T51 B60	P104X510 P104X60LB	33.1 33.5	840 850	29.1 37.1	13.18 16.82
	Tamrock L400, 500, 550 HL432	125R (R32)	P87D120	15.0	381.0	4.6	2.08
	Tamrock HL438TS, HL538TS	125R (R32) 150R (R38) T38	P88X120 P88X150 P88X380	17.7 17.7 17.7	450.0 450.0 450.0	6.6 6.6 6.6	2.99 2.99 2.99

*Blow Tube Code: B=5/16" D=3/8" F=7/16" H=1/2" J=9/16" L=5/8" N=3/4" X=External Flush

	Drill	Thread	Part Number	Length Inches	Length MM	Weight Pounds	Weight Kilos
Tamrock							
	Tamrock	150R (R38)	P97X150	17.75	451.0	9.8	4.44
	HL500	T38	P97X380	17.75	451.0	9.8	4.44
		T45	P97X450				
	Tamrock	T38	P79X380	23.62	600.0	14.5	6.54
	HL600	T45	P79X450	23.63	600.0	14.5	6.54
	Tamrock	150R (R38)	P91X150	23.65	600.0	13.6	6.16
	HL645	T38	P91X380	23.65	600.0	13.6	6.16
		T45	P91X450	23.65	600.0	14.3	6.48
	Tamrock	125R (R32)	P36J120	14.0	356.0	7.1	3.22
	L750, L600	150R (R38)	P36J150	14.0	356.0	7.6	3.44
		T38	P36J380	15.0	381.0	7.6	3.44
		T45	P36J450	15.0	381.0	8.5	3.85
	Tamrock	T38	P99X380	23.65	600.0	18.5	8.39
	HL700/750	T45	P99X450	23.65	600.0	18.5	8.39
		T51	P99X510				
	Tamrock	125R (R33)	P48L120	17.75	451.0	7.8	3.53
	HL700 / 750	150R (R38)	P48L150	17.75	451.0	7.8	3.53
		T38	P48L380	17.75	451.0	7.8	3.53
		T45	P48L450	15.25	387.0	9.6	4.35
	Tamrock	T45	P92N450	19.75	502.0	13.9	6.30
	HL850	T51	P92N510	19.75	502.0	14.1	6.66
	Tamrock	T45	P92X450	26.4	671.0	18.7	8.48
	HL850S	T51	P92X510	26.4	671.0	19.6	8.89
	Tamrock	T45	P95X450	26.3	668.0	24.0	10.88
	HL1000	T51	P95X510	26.3	668.0	24.0	10.88
	Tamrock-Secoma	125R (R32)	P29X120	19.68	500.0	11.0	4.98
	Hydrastar 200/300	150R (R38)	P29X150	19.09	485.0	11.0	4.98
		T38	P29X380	19.09	485.0	11.0	4.98

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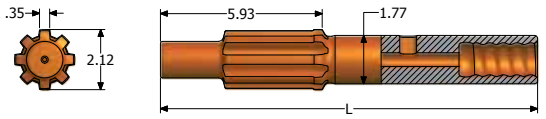
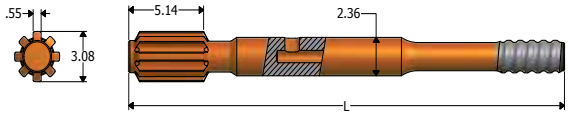
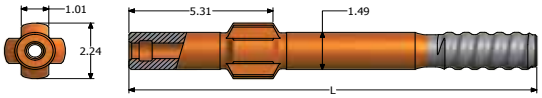
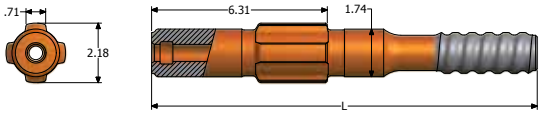
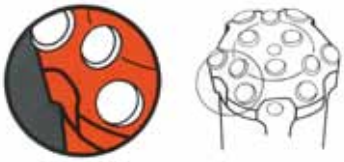
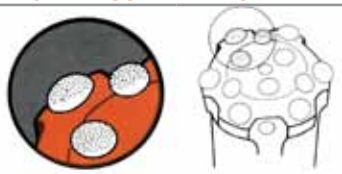
Striking Bars

	Drill	Thread	Part Number	Length Inches	Length MM	Weight Pounds	Weight Kilos
Tamrock / Toyo							
	Tamrock-Secoma Hydrastar 200	125R (R32) FEMALE	P82X12F	13.81	341.0	7.7	3.49
	Tamrock HL 1500	T51	P125X510	29.9	760	21.0	9.55
	Tamrock HL 438	T38	P88H380	15.0	381	8.7	3.95
	Toyo TYPR 120, 220	125R (R32) 150R (R38) T38 T45	P36J120 P36J150 P36J380 P36J450	14.0 14.0 15.0 15.0	356.0 356.0 381.0 381.0	7.1 7.6 7.6 8.5	3.22 3.44 3.44 3.85

*Blow Tube Code: B=5/16” D=3/8” F=7/16” H=1/2” J=9/16” L=5/8” N=3/4” X=External Flush

Rock Bit Care

The total life or distance that a rock bit will drill depends on many factors. Of these, rock bit reconditioning can be the major factor both in the cost and performance of any rock bit, button or rooftop insert.

Button	Illustration
1. Button bits should be reconditioned when the body wears away faster than the button wears, causing it to protrude excessively. This will prevent the button from pinching or shearing off. This frequently happens in softer abrasive ground.	 BODY WEAR - EXCESSIVE PROTRUSION
2. When the button wears at a more rapid rate than the body, especially in harder, more abrasive rock, the buttons should be reconditioned frequently.	 WORN FLUSH WITH BODY
3. Button bits should be reconditioned if the buttons polish or show signs of surface fracturing in non-abrasive rock. This will prevent the surface fractures from propagating which could result in fracturing the buttons.	 SURFACE FRACTURING
Rooftop	**Illustration**
1. Rooftop bits should be reconditioned when the dullness of the cutting edge is 3/32" (2.5mm) flat, measured on the gable halfway between the centerhole and the outside diameter of the bit.	 DULLNESS OF CUTTING EDGE
2. A bit should be sharpened when the outside corner of the insert has worn in excess of 3/16" (5.0mm) radius.	 WORN OUTSIDE CORNER
3. Rock bits should be gauge ground when the bit begins to reverse gauge.	 REVERSE GAUGE
4. In non-abrasive ground, a bit should be sharpened periodically to remove any high polished area of the insert or surface fracturing to prevent the surface fractures from propagating which could result in a fractured insert.	 SURFACE FRACTURING

Tips on Drilling

1. Be Prepared

- Experienced, skilled drill operator
- Avoid improper bit handling, i.e. carbide against carbide damage
- Drill rig properly lubricated
- Sufficient drilling accessories on hand
- Keep accessories clean and free from damage
- Striking face is square and true

2. Starting the drill

- Firm footing for the drill
- Align and collar the hole properly
- Begin slowly and adjust the feed and throttle as the bit buries

3. Drilling

- Maintain enough rotation for good penetration
- Excessive rotation will wear the gauge
- Maintain correct feed pressure;
  - Insufficient air pressure leads to a loose drill string and premature wear
  - Sufficient air pressure is ideal to keep the bit from bouncing on the bottom
  - Too much pressure will buckle and bind the steel in the hole
  - Over feeding in hard rock will reduce penetration
  - Over feeding in soft rock can lead to burying the bit and hanging the steel

4. Clean hole

- Blow the hole frequently when drilling deep
- Soft or muddy ground can seep causing the steel to hang up
- Blow with every drill rod added below the hole, preventing a plugged steel

5. Drill dieseling

- Occurs with insufficient feed pressure
- Also happens with full throttle when withdrawing the bit
- Dieseling heats up the drill and burns off the lubricant
- Results could include a destroyed hammer
- Stop dieseling by reducing the drill throttle and increasing feed pressure

6. Changing bits

- Try to follow a larger bit with a smaller bit
- Try to use new bits with new steel
- Use lubricant on bits, as well as couplings and steel threads
- Remove bits with a bit wrench or “rattle” loose, no beating with a hammer

Notes

This catalog features Brunner & Lay's wide range of Drilling Accessories that have been designed for today's hard hitting rock drills. Customer requirements, other than the products featured in this catalog, will be considered by special arrangement.

Brunner & Lay reserves the right to amend product specifications without prior notification.

Product Warranty

The company's liability in respect to any warranty claim is limited to replacement, and does not extend to any other expenditure incurred or to any consequential damage. Warranty claims are subject to immediate notification of any problems and return of the product in question to Brunner & Lay under the Returned Goods Policy.

To insure safety, operators should select the correct tool for their machine and the job they are performing.

No other warranty is expressed or implied.

Brunner & Lay

P.O. Box 1190
1510 N Old Missouri Rd
Springdale AR 72765
ph 479 756-0880 fx 479 756-5366

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